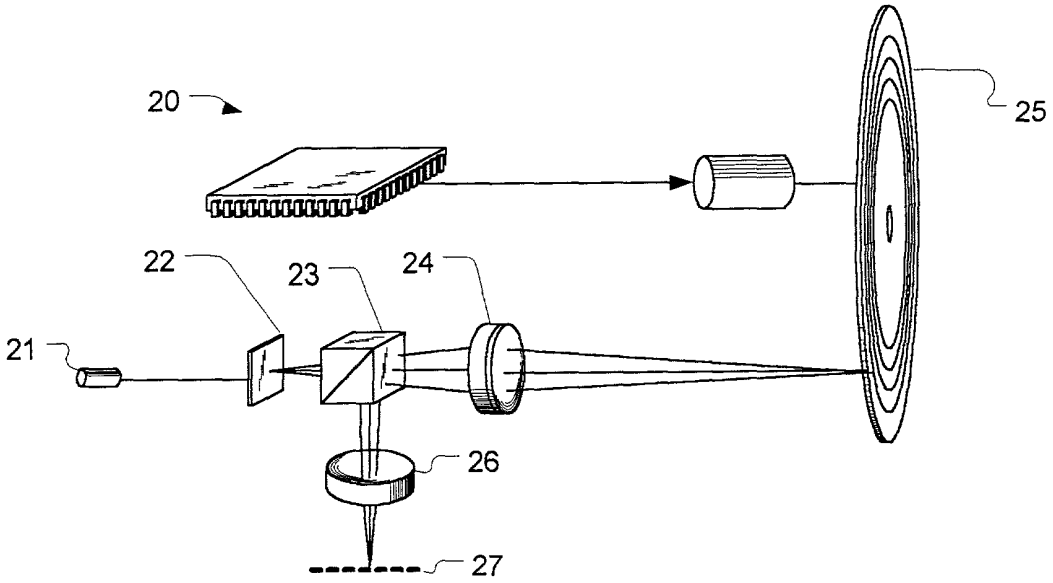


FIG. 1

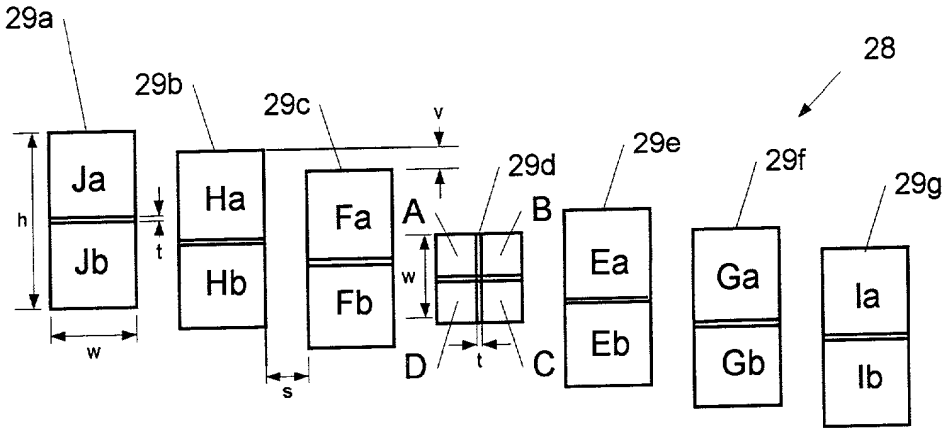

29a
29b
29c
28
v
29d
29e
29f
29g
Ja
Jb
Ha
Hb
Fa
Fb
A
B
C
D
Ea
Eb
Ga
Gb
Ia
Ib
h
w
t
s

FIG. 2A

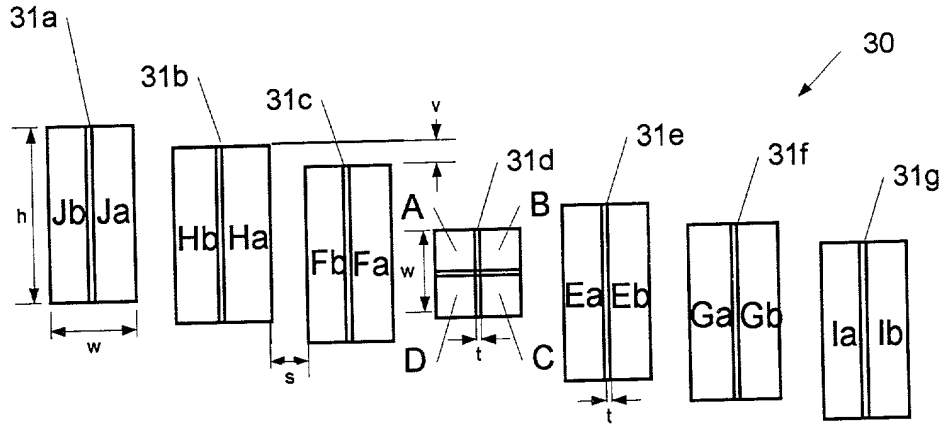

31a
31b
31c
30
v
31d
31e
31f
31g
Jb
Ja
Hb
Ha
Fb
Fa
A
B
C
D
Ea
Eb
Ga
Gb
Ia
Ib
h
w
t
s

FIG. 2B

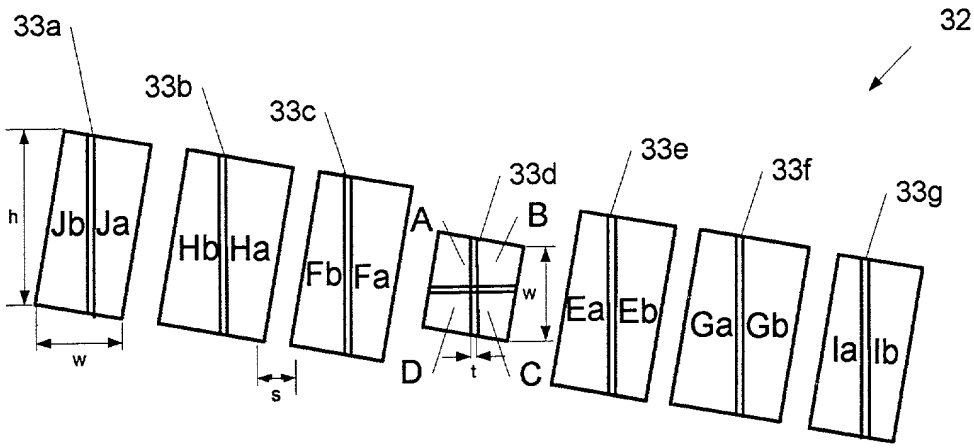
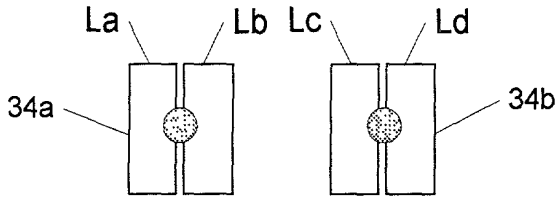
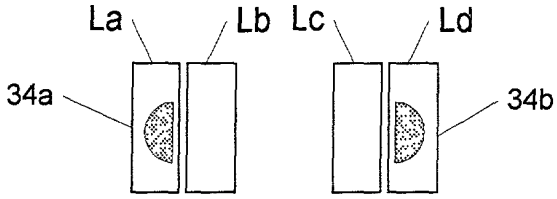

33a
33b
33c
33d
33e
33f
33g
32
h
Jb
Ja
Hb
Ha
Fb
Fa
A
B
w
Ea
Eb
Ga
Gb
Ia
Ib
w
s
D
t
C

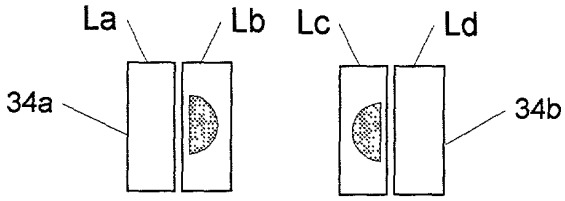
FIG. 2C



Disk in focus

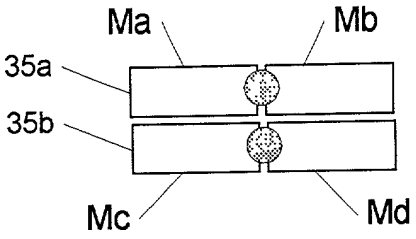


Disk close to objective lens

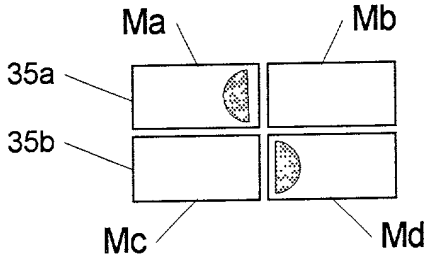


Disk far from objective lens

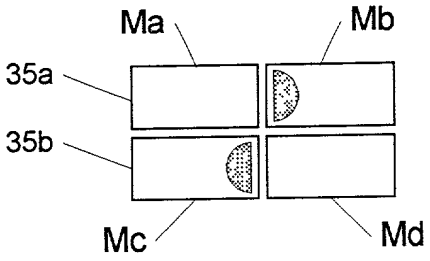
FIG. 3A



Disk in focus



Disk close to objective lens



Disk far from objective lens

FIG. 3B

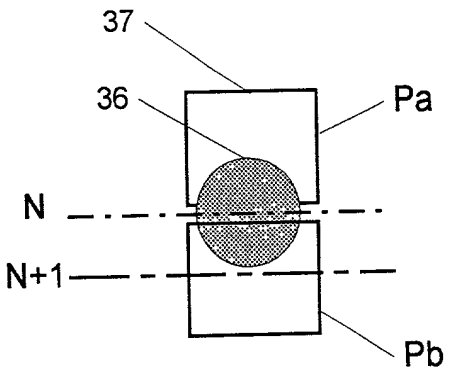


FIG. 4

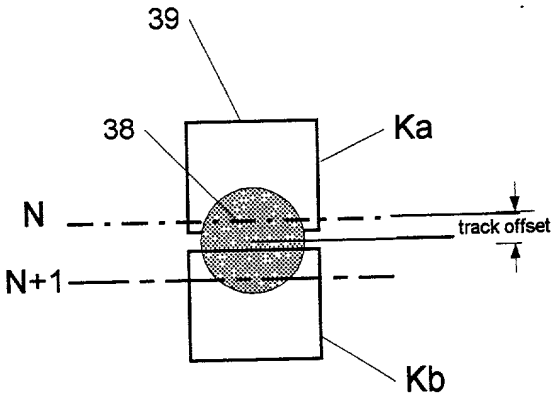


FIG. 5A

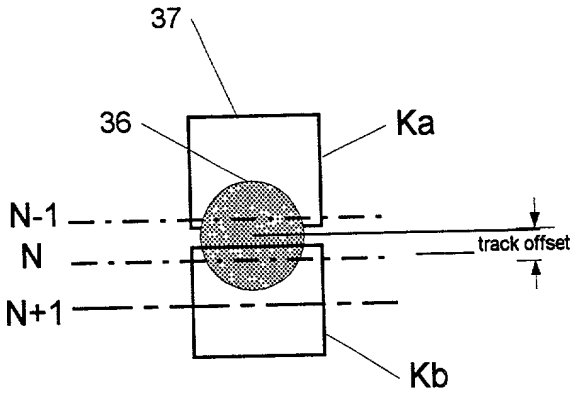


FIG. 5B

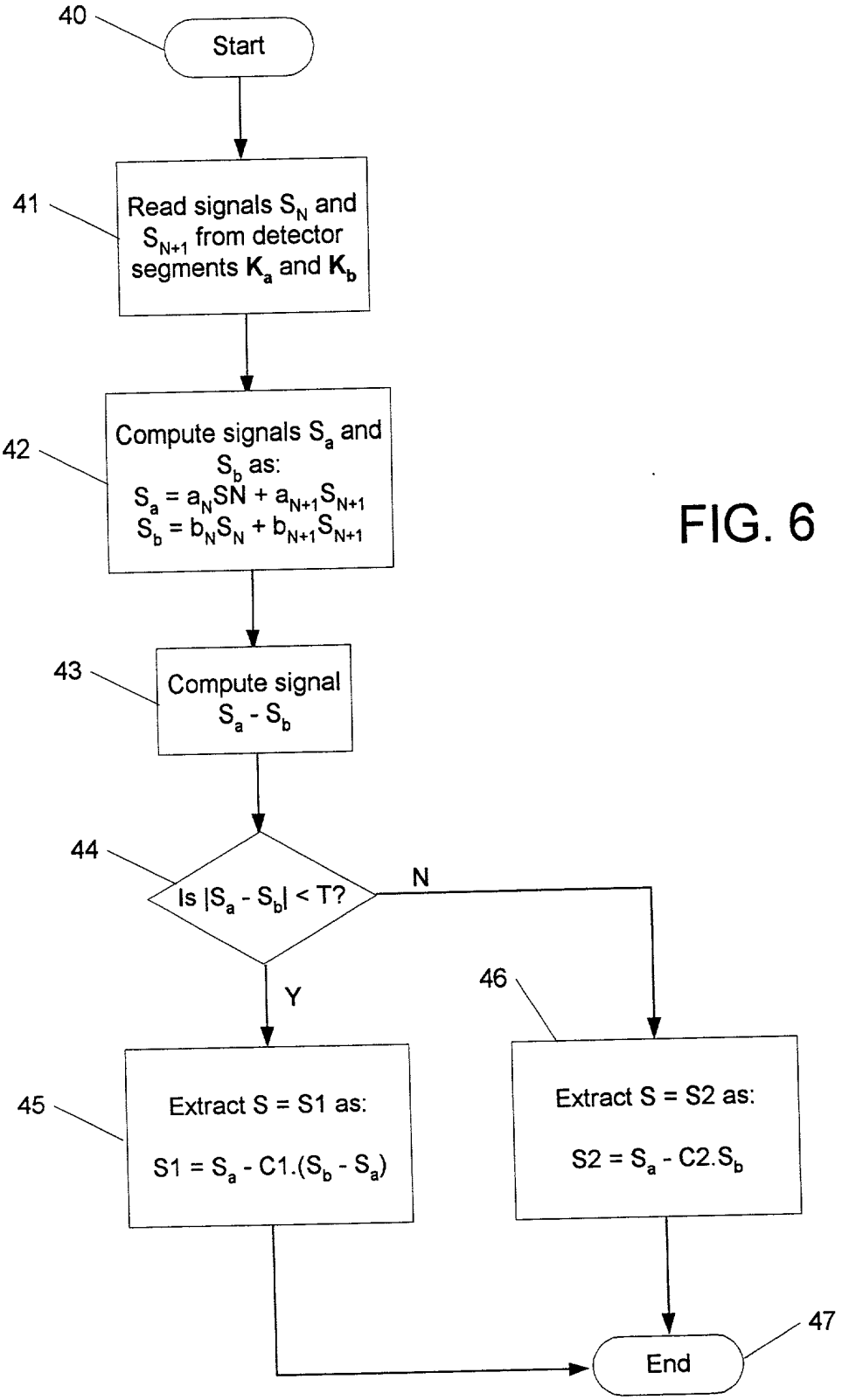

40
Start
41
Read signals S_N and S_{N+1} from detector segments K_a and K_b
42
Compute signals S_a and S_b as:
$S_a = a_N SN + a_{N+1} S_{N+1}$
$S_b = b_N S_N + b_{N+1} S_{N+1}$
43
Compute signal $S_a - S_b$
44
Is $|S_a - S_b| < T$?
N
Y
45
Extract S = S1 as:
$S1 = S_a - C1.(S_b - S_a)$
46
Extract S = S2 as:
$S2 = S_a - C2.S_b$
47
End

FIG. 6

48

Track Offset (% of track pitch)	No split detectors, no cross-talk cancellation	Split detectors, no cross-talk cancellation	No split detectors, with cross-talk cancellation	Split detectors with cross-talk cancellation
0	6.2	6.8	6.2	5.4
7	6.7	6.4	6.1	5.2
14	9.9	6.6	6.6	5.3
21	16.5	6.25	7.8	5.4
29	23.9	5.9	12.5	5.9

FIG. 7

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Track Offset (% of track pitch)	Coefficient C1 (cross-talk cancellation algorithm 1)	Coefficient C2 (cross-talk cancellation algorithm 2)
0	-0.45	-1
7	-0.32	-0.47
14	-0.21	-0.25
21	-0.1	-0.12
29	0.005	-0.005
36	0.1	0.1
43	0.26	0.21
50	0.4	0.29

FIG. 8

48

Track Offset (% of track pitch)	RMS Ratio (cross-talk cancellation algorithm 1)	RMS Ratio (cross-talk cancellation algorithm 2)
0	0.99	1.99
7	0.95	1.41
14	0.95	1.19
21	0.97	1.08
29	1	1
36	1.06	0.95
43	1.15	0.91
50	1.22	0.87

FIG. 9